ABSTRACT OF THE DISCLOSURE

Disclosed herein are a biaxially textured pure metal or alloy layer deposited by electroplating process on the surface of a single-crystalline or quasi-single-crystalline metal substrate, and a method for manufacturing the biaxially textured pure metal or alloy layer. Specifically, the biaxially textured pure metal or alloy layer is deposited by electroplating process on the surface of a pure metal or alloy substrate having single-crystalline or quasi-single-crystalline orientation. The biaxially textured pure metal or alloy layer has a misorientation on the c-axis of 4° or less and a misorientation on the plane formed by the a-axis and b-axis of 5.2° or less in which the misorientation on the c-axis is determined by a Full Width at Half Maximum of peaks on the θ-rocking curve and the misorientation on the plane formed by the a-axis and b-axis is determined by a Full Width at Half Maximum of peaks on the Φ-scan.

The biaxially textured pure metal and alloy layers can be manufactured simply by electroplating process without the need for additional processes. In addition, the biaxially textured layers fabricated according to method in the present invention exhibit excellent texture compared to those manufactured through conventional processes, and thus can be used as metal substrates for superconducting wires and thin

film magnetic materials. Accordingly, they are expected to greatly contribute to the development of related industries.